

**PUBLIC UTILITIES COMMISSION OF THE STATE OF CALIFORNIA**

Consumer Protection & Safety Division  
Rail Transit and Crossing Branch  
Rail Transit Safety Section

RESOLUTION ST- 72  
January 13, 2005

**RESOLUTION**

RESOLUTION ST-72 GRANTING LOS ANGELES TO PASADENA METRO BLUE LINE CONSTRUCTION AUTHORITY'S REQUEST TO DEVIATE FROM THE GENERAL ORDER 95 REQUIREMENTS OF MINIMUM CLEARANCES BETWEEN MESSENGER WIRES AND STRUCTURES AT LAKE AVENUE STATION.

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**SUMMARY**

This resolution grants Los Angeles to Pasadena Metro Blue Construction Authority's (PBLCA) request for authority, on behalf of Los Angeles County Metropolitan Transportation Authority (LACMTA), to deviate from the clearance requirements between messenger wires and structures of General Order 95 (GO 95), Rule 37, on the Metro Gold Line (MGL). It allows reduced clearance between messenger wires and structures at Lake Avenue Station in Pasadena, without adversely affecting the safety function of clearances between messenger wires and structures.

**PROJECT DESCRIPTION**

The MGL is a new 13.7-mile light rail system built from Union Station in Los Angeles to Sierra Madre Villa Station in Pasadena. The PBLCA constructed the system and LACMTA has been operating the MGL trains as part of the LACMTA transit system since July 26, 2003. The MGL includes 13 passenger platform stations. The design of the MGL Light Rail Project includes an overhead catenary system (OCS) consisting of messenger wire, hangers, and a trolley or contact wire to supply traction power for the propulsion of light rail vehicles. The system operates at a nominal voltage of 750 VDC.

**BACKGROUND**

By letters dated November 13, 2003 and January 16, 2004, PBLCA requested, on behalf of LACMTA, authority to deviate from the messenger wire and structure clearance requirements of GO 95, Overhead Electric Line Construction, Rule 37, Minimum Clearances of Wires Above Railroads, Thoroughfares, Buildings, Etc. for MGL Lake Station.

GO 95, Rule 37 states, "the clearances between conductors, guys, messengers or trolley span wires and buildings, poles, structures, or other objects, shall not be less than those set forth in Table 1, at a temperature of 60°F and no wind." Table 1, Case 7, Column C, Trolley Contact, Feeder and Span Wires, 0-5000 Volts, state, "Horizontal clearance of conductor at rest from buildings (except generating plants and substations), bridges or other structures (upon which men may work) where such conductor is not attached thereto is 3 feet." The 3 feet horizontal clearance of conductor at rest from structures provides a safe distance for a person who might be working on the structure. The horizontal catenary system conductor wire clearance from the MGL Lake Station north and south stairwells is 18 inches.

PBLCA states that the Lake Avenue Station is constructed below grade in the median of the I-210 Freeway. Consequently, this station is provided with concrete pedestrian walkways/stairs to enable patrons to access the station from Lake Avenue.

In addition, PBLCA states that the right-of-way is narrow in this area due to the freeway lanes either side. Therefore, only limited horizontal clearance is possible between structural elements of the walkways/stairs and the catenary system. This has resulted in the OCS messenger wire being at the same elevation as of the stairwells and separated just 18 inches horizontally.

PBLCA justifies the request for waiver by stating that the OCS messenger wire is not directly accessible by persons using the stairwells as the stairwell fence provides a barrier. The OCS messenger wire is only accessible via small gaps between the fence and the concrete stairs and would thus require a deliberate act to bring a person into danger.

PBLCA continues stating that as an additional precautionary measure, the OCS messenger wire adjacent to the stairwells will be insulated by means of rubber mastic tape rated 1000 volts.

PBLCA adds that maintenance activities for these structures will be conducted under LACMTA operating rules and procedures, any maintenance activity on the structures would require de-energization of the catenary system as a prerequisite to starting work. Therefore, all activities and safety precautions are within the control of a single organization.

PBLCA also states that as an additional precaution, "DANGER HIGH VOLTAGE KEEP CLEAR" signs have been fitted to the structures to provide additional warning to maintainers of the danger posed by the catenary system.

The LACMTA Wayside Systems, Operation Safety personnel, and PBLCA agree that the existing clearances between the OCS and Lake Avenue Station stairwell do not impair safety.

### **NOTICE**

PBLCA states that a copy of the variance application letter was mailed and distributed to the potentially affected parties.

### **PROTESTS**

On November 21, 2003 PBLCA's deviation request was noticed in the Commission's Daily Calendar. No protest of the variance application has been filed with the Commission.

### **DISCUSSION**

The Consumer Protection and Safety Division (CPSD) has reviewed the request and believes it should be granted.

Staff inspected the Lake Avenue Station in June 2003, before MGL revenue operation. Staff noted the GO 95 OCS violation to the PBLCA. PBLCA agreed to install temporary plywood covers on the stairwell case for the OCS messenger

wire to be inaccessible to the public during revenue operation. In July 2003, before the MGL revenue operation, staff inspected the temporary plywood covers on the stairwell case and found them satisfactory as a temporary solution.

By letters dated November 13, 2003 and January 16, 2004, PBLCA requested, on behalf of LACMTA, authority to deviate from the messenger wire and structure clearance requirements of GO 95.

In April 2003, PBLCA notified staff that all the proposed protection measures are in place and the station is ready for inspection. Staff met with PBLCA and LACMTA representatives at Lake Avenue Station on April 19, 2003 to inspect the station. Staff found the corrective measures acceptable. Factors influencing the CPSD's evaluation included:

- Between the stairwell, where people can stand, and the fence there is a 3 inch gap. The fence height is 28 inches. It is made of sturdy porous metal. Each hole is in square shape with 5/16 inches on each side. Above the porous metal fence there is a 2½ inch gap, above which there is a 9½ inch solid metal structure. Above the metal structure there is a gap of 3½ inches above which there is a 28 inch porous metal fence. The distance between the lower gap to the OCS messenger wire is approximately 2½ feet. The distance between top of the fence and the OCS messenger wire is approximately 9 feet. The width of the structure is 6½ feet.
- PBLCA installed three sets of rubber insulation on the messenger wire, rated 1000 volts, spanning eight feet beyond the entire length of the stairwell. The rubber insulation prevents public access to the messenger wire and would provide adequate protection for the general public and LACMTA maintenance workers in the event of an emergency.
- PBLCA installed warning signs at the stairwell fence.
- LACMTA Wayside Systems Deputy Executive Officer stated that the hazard is negligible since the staircase is not a common ground point; therefore electric current would not flow through even if someone touched the messenger wire.
- LACMTA Track Allocation Permit Procedure, February 2004 Revision, under Restrictions states that power down may be required when working within 10 feet of OCS (Blue/Green/Gold Line). Remote power down may be required for work being done in close proximity to the OCS.

With the installation of warning signs and rubber insulation (approved protection devise) over the messenger wires, the CPSD believes that the additional risk to public and LACMTA maintenance or emergency crews posed by granting of this variance is acceptable.

### **COMMENTS**

This is an uncontested matter in which the resolution grants the relief requested. Therefore, the 30-day waiting period required by PU Code section 311 (g) (1) and the opportunity to file comments on the draft resolution is waived. Accordingly, this matter will be placed on the Commission's agenda directly for prompt action.

### **FINDINGS**

1. By letter dated November 13, 2003 and January 16, 2004, PBLCA requested authority, on behalf of LACMTA, to deviate from the requirements of GO 95, Rule 37, Table 1, Case 7, Column C, Horizontal Clearance of Conductor at Rest from Buildings (Except Generating Plants or Substations) Bridges or Other Structures (Upon Which Men May Work) Where Such Conductor is not Attached Thereto for Trolley Contact, Feeder and Span Wires, 0-5000 Volts.
2. PBLCA identified Lake Avenue Station for reduced horizontal clearance of conductor from stairwells.
3. General Order 95, Rule 37, Table 1, Case 7, Column C requires providing a minimum clearance of 3 feet between conductor and structures, upon which men may work.
4. The OCS conductor to stairwell structure distance at Lake Avenue Station is 18 inches.
5. Between the stairwell, where people can stand, and the fence there is a 3 inch gap. The fence height is 28 inches. It is made of sturdy porous metal. Each hole is in square shape with 5/16 inches on each side. Above the porous metal fence there is a 2½ inch gap, above which there is a 9½ inch

solid metal structure. Above the metal structure there is a gap of 3½ inches above which there is a 28 inch porous metal fence. The width of the structure is 6½ feet.

6. The distance between the lower gap to the OCS messenger wire is approximately 2½ feet. The distance between top of the fence and the OCS messenger wire is approximately 9 feet.
7. PBLCA installed high voltage warning signs on the stairwell fence.
8. PBLCA installed three sets of rubber insulation on the messenger wire spanning the entire length of the stairwell, thus preventing public access to the messenger wire.
9. LACMTA, the MGL operator, has confirmed that it is agreeable to the reduced clearance between conductor wires and stairway structure at Lake Avenue Station.
10. LACMTA Track Allocation Permit Procedure, February 2004 Revision, under Restrictions states that power down may be required when working within 10 feet of OCS (Blue/Green/Gold lines). Remote power down may be required for work being done in close proximity to the OCS.
11. PBLCA, LACMTA, and staff are in agreement that reduced clearance between conductor wires and stairway structure at Lake Avenue Station will not significantly impact public safety.

**THEREFORE IT IS ORDERED THAT:**

1. PBLCA's request, on behalf of LACMTA, for authority to deviate from the requirements of GO 95, Rule 37, Table 1, Case 7, Column C, Horizontal Clearance of Conductor at Rest from Buildings (Except Generating Plants or Substations) Bridges or Other Structures (Upon Which Men May Work) Where Such Conductor is not Attached Thereto for Trolley Contact, Feeder and Span Wires, 0-5000 Volts for the Lake Avenue Station stairway structure is granted.

January 13, 2005

2. This resolution is effective today.

I certify that the foregoing resolution was duly introduced, passed, and adopted by the Commission at its regularly scheduled meeting on January 13, 2005. The following Commissioners voted favorably thereon:

/s/ STEVE LARSON  
STEVE LARSON  
Executive Director

MICHAEL R. PEEVEY  
President  
GEOFFREY F. BROWN  
SUSAN P. KENNEDY  
Commissioners